

Appendix F. Technical Requirements for EDI VAN Providers

OBJECTIVE

The Federal government is committed to implementing electronic commerce (EC) using electronic data interchange (EDI). The objective of this document is to describe the technical requirements for providers of EDI value-added networks (VANs) participating in the Federal EC system. The EDI VANs will be used to exchange transactions between Federal agencies and government trading partners (TPs). The technical requirements outlined below apply to all program and functional areas supported by the government-wide EC architecture. These requirements are the basis of the VAN certification testing requirements. A *Certification Agreement for EDI VAN Services* will be signed by the Federal government and the provider after successful testing of the technical requirements. For the purpose of this document, the term “VAN” applies to commercially recognized value-added networks and private networks providing EDI support to individual firms.

OVERVIEW

The National Performance Review, led by Vice President Gore, envisions a modernized electronic government in which high-speed telecommunications links or information highways will carry business data and support government operations. In October 1993, the President signed an Executive memorandum directing the heads of executive departments and agencies to streamline procurement through EC. The objectives include exchanging procurement information electronically between the private sector and the Federal government, providing businesses with greater and simplified access to Federal procurement opportunities, and employing nationally and internationally recognized data formats. Exchanging this information electronically reduces data entry errors, eliminates mailing costs, decreases paperwork, reduces inventories, improves cash management, and shortens order times.

The Federal government has set aggressive goals to make EC a standard way of conducting business in the 1990s. Initially, the

government will focus on EC for acquisition. By September 1994, it plans to establish an initial EC capability that will enable the Federal government and private vendors to exchange standardized requests for quotations, quotes, purchase orders, notices of awards, invoices, and remittance advices electronically. Government-wide implementation of EC for appropriate Federal purchases should be complete, to the maximum extent possible, by January 1997. The architecture designed to support procurement activities then will be expanded to include other EC efforts.

To achieve the goal of implementing a Federal EC infrastructure, the Federal government will use a virtual network concept, with multiple entry points, to exchange transactions between the Federal government and the providers used by its commercial trading partners. These commercial trading partners may choose to use any provider that meets these technical requirements and is certified by the Federal government. A trading partner may also use a provider that has a business arrangement with and interconnects with a provider that has been EDI certified by the Federal government. A commercial trading partner will send and receive information to and from the government via their provider. A firm meeting the terms and conditions of this agreement can operate as a provider on its own behalf under this agreement, even if the firm does not intend to act as a provider for other Federal trading partners.

This document provides the technical requirements for establishing and maintaining connectivity with the government EC system. Each provider will establish redundant connectivity with the government in accordance with this agreement.

SERVICES

DEFINITION

A provider shall be defined as a public or private packet-switched network providing a variety of services that allow trading partners to have one communication environment to transmit, receive, and store EDI messages. The provider also provides access to the EDI messages addressed to the trading partners. A firm meeting the terms and conditions of this agreement can operate as a provider on its own behalf under this agreement, even if the firm does not intend to act as a provider for other Federal trading partners. Trading partners need not directly receive nor send documents in the standard formats defined below. However, the

Federal system will send all documents to the provider using these formats, and all transactions must be in these formats when they are received by the Federal system from the provider.

MAILBOXES

The EDI VAN provider must provide the Federal government EC system with at least one EDI test mailbox per connection point for a minimum of 3 months. The mailboxes will be used for monitoring compliance with the terms and conditions of this agreement and for troubleshooting and testing. The government may store data in this mailbox for up to 5 business days. In addition, the EDI VAN provider will provide at least one operational mailbox to each Federal government network entry point (NEP). The EDI VAN provider must provide the government with the use of any software needed to use this mailbox.

It will be the responsibility of the Federal government to provide outgoing data to the EDI VAN provider's mailbox in a timely manner. All one-to-one communications between trading partners and the government must be made accessible to the recipient within 1 hour from the time such a transaction is sent to the VAN by the government.

STANDARDS AND CONVENTIONS FOR STANDARDS USAGE

Transaction Set Standards

The provider shall exchange all transactions with the government using the American National Standards Institute (ANSI) Accredited Standards Committee (ASC) X12 standards or United Nations EDI for Administration, Commerce, and Transport (EDIFACT) standards. The provider shall be informed by the government when it is necessary to use EDIFACT standards. The VAN provider shall read and interpret ASC X12 header and/or trailer records (i.e., ISA, GS, GE IEA segments) and the equivalent parts of EDIFACT messages.

The provider shall support the exchange of ASC X12 transaction standards and Draft Standards for Trial Use (DSTUs) in the current version and release (Version 3, Release 4, referred to as "3040") as well as two prior releases (3020 and 3030). New versions and releases of the ANSI ASC X12 standards shall be supportable by

the provider within 90 days of release. Prior to the commencement of testing, the government will provide participating providers a list of transactions to be used.

The ANSI ASC X12 standards and supporting documents may be obtained from the Data Interchange Standards Association, 1800 Diagonal Road, Suite 355, Alexandria, Virginia 22314-2840, telephone (703) 548-7005.

Implementation Conventions for Use of ASC X12 Standards

As a matter of common practice, ASC X12 standards and DSTUs, as well as EDIFACT messages, are seldom used in their entirety. For this reason, the Federal government is developing a series of implementation conventions, which are subsets of the ASC X12 standards and DSTUs. These conventions will describe the precise manner in which the Federal government intends to use the ANSI ASC X12 standards and DSTUs with its trading partners.

The provider shall (directly or indirectly via affiliated services) enable interested businesses to receive and send ASC X12 transaction sets following the Federal government implementation conventions for the ASC X12 standards. Conventions will be provided for EDIFACT messages when appropriate. New implementation conventions will be available to the provider upon their release. The Federal Electronic Commerce Standards Management Committee will notify the provider of the deadline to comply with the conventions and any changes.

ASC X12 Transaction Sets 841 and 864

The Federal government plans to include both binary and ASCII data with some of its electronic transaction sets. These data will be sent using either the ASC X12 841 or 864 transaction sets. The provider must support the exchange of these transaction standards and may provide services to enable interested subscribers to exchange such data with a Federal department or agency and translate it into usable forms.

Transaction Exchange Methods

The provider shall exchange ASC X12 and EDIFACT transactions with the government using one of the following

methods:

- Consultative Committee on International Telegraphy and Telephony (CCITT) X.400 (Version 1988). In conjunction with X.400, directory services conforming to CCITT X.500 also are part of the Government Open Systems Interconnection Profile (GOSIP) suite and necessary to ensure reliable delivery of transactions. The GOSIP uses this standard. Use of the GOSIP compliant X.400 and X.435 (the version of X.400 designed for exchange of EDI transactions) is required.
- ANSI ASC X12.56 Interconnect Mailbag Control Structure. This ASC X12 standard is designed to control the exchange of groups of ASC X12 transaction sets between two interconnecting entities. The entities in this agreement will be the VAN provider and the Federal government.
- File transfer protocol (FTP) or UNIX-to-UNIX Copy Program (UUCP) over transmission control protocol/Internet protocol (TCP/IP).

The following protocols are subject to availability. Providers will be informed as the Federal government achieves these capabilities:

- File transfer, access, and management (FTAM) over open system interconnectivity (OSI).
- Simple mail transfer protocol (SMTP) (Internet request for comment 822). Each EDI transaction set (in the case of ASC X12, beginning with an ISA segment) will be in a separate SMTP envelope.

Other mutually acceptable methods of data exchange may be used provided they are made available to all participating VAN providers.

INTERFACE BETWEEN GOVERNMENT NETWORK ENTRY POINTS AND PROVIDERS

All EDI transactions exchanged between commercial trading partners and the Federal government shall be exchanged via EDI VANs. Initially, connectivity between the government NEPs and the providers will be established through one of the following asynchronous, synchronous, or binary synchronous connectivity

methods:

- Toll-free telephone call. The government will dial a phone number using standard modem connectivity protocols to exchange transactions with the provider. Minimum speed is 9,600.
- Dedicated circuit (leased line) to the government NEP. The VAN provider, at its expense, is responsible for all cables and peripheral equipment needed to receive the data beyond the port at the Federal entry point. Minimum line speed is 19,200 bits per second.
- Internet Protocol Handbook (NIC 50004-50006). The government will support an Internet suite of protocols.
- Support of the GOSIP suite as described in the current FIPS Publication 146-1.

The provider may change the transaction exchange method or interface to the government NEPs after providing 30 days advance notice to, and receiving acceptance of, the Federal technical representative. Any change will be subject to the testing requirements discussed below. The actual implementation date will be coordinated with the government.

VAN-TO-VAN INTERCONNECTIVITY

All providers participating under the *Certification Agreement for EDI VAN Services* shall maintain interconnectivity to ensure that government data are accessible to all interested trading partners and that these trading partners are able to conduct business electronically with all Federal agencies.

HOURS OF OPERATION AND AVAILABILITY

The provider shall be accessible for exchange of transactions to and from the government NEPs 24 hours a day, 7 days a week, excluding 8 hours weekly for regularly scheduled routine maintenance. The provider shall report any scheduled and unscheduled breaks in service under this agreement to the government in a prudent manner. Regularly scheduled downtime should be reported at least 14 days prior. Unscheduled downtime should be reported within 3 hours. All downtime must be reported to the government contact point at the NEP affected by the disruption in service.

DATA BACKUP AND RECOVERY

The provider shall back up all data processed by its host computers such that full data recovery is possible. Data in the Federal mailbox shall be retained by the provider a minimum of 30 days after the mailbox has been emptied (received) by the government representatives at various NEPs. The most recent 10 days shall be retained in on-line storage. The provider shall provide the government with the capability to restore these retained EDI transactions either as entire contents of the mailbox or as specific sets of transactions identified by the X12 interchange control number.

An audit trail for transactions exchanged via the Federal mailbox shall be available for at least 90 days. At a minimum, that audit trail shall include the date and time a message has been received or delivered, the interchange control number, and the sender ID.

Each provider shall establish redundant connectivity with the government NEPs for disaster recovery purposes.

QUALITY CONTROL

The provider shall have an internal quality monitoring program that assures minimum compliance with ISO 9000 Standard to ensure that reliable data are transmitted and that communication lines are maintained to exchange electronic transactions with the government.

DATA PROTECTION

Providers are expected to provide administrative, technical, and physical safeguards against threats and hazards to the security and confidentiality of all government data and traffic. The provider shall be able to secure system access, data base access, and EDI mailboxes from unauthorized personnel. The provider shall use reasonable care to prevent loss, alteration, or disclosure of information or data generated by or addressed to the government. The provider will not knowingly disclose information or data belonging to the Federal government without written consent. The provider's program for data protection is subject to approval and periodic review (audit) by the Federal government.

Only one-to-all transactions addressed directly to the provider by the government and identified as such shall be considered public and do not require written consent for disclosure to others.

USER DOCUMENTATION

The provider shall provide to the Federal government all user documentation concerning the services it provides to other basic electronic mailbox subscribers conducting EC with the Federal government via this agreement. The provider shall provide timely updates of such documentation when modified. All such materials, if specifically identified for return, will be returned by the Federal government to the provider upon the expiration or termination of this agreement.

TRANSMISSION OF ENCRYPTED DATA

Upon selection of a data encryption standard by the Federal government, some EDI transactions may be encrypted. The provider shall process such encrypted transactions exchanged between the Federal government and contractors. The Federal government's selection of a standard will be made public and available to participating providers. Neither the address segments of the EDI transaction sets (e.g., the ISA and IEA segments in ANSI ASC X12 transaction sets) nor any electronic envelope will be encrypted.

CERTIFICATION TESTING AND INITIATION OF SERVICES

Services as specified may begin after successful testing of the following:

- Connectivity between the provider and the Federal network.
- Compliance with the relevant enveloping and transaction standards.
- Ability to successfully transmit one-to-one and one-to-public EDI transactions.
- Other requirements in this agreement, including backup site capability.

A copy of the test certification plan will be provided to the provider 15 days prior to testing.

After completion of successful testing, the provider and the Federal government will sign a *Certification Agreement for EDI VAN Services*. This certification acknowledges that the provider is qualified to do business with the Federal government and to participate in the Federal EC system. It also outlines the terms of the agreement and responsibilities of the provider and the Federal government. The government will inform the provider in writing of the date to establish actual services (the exchange of production transactions).

If the government concludes that the provider has failed the test, it will inform the provider in writing of the reasons for failure. The provider may request a second test within 10 days of notice of failure. A retest must be carried out in accordance with mutually acceptable conditions between the Federal government and the provider.

DISASTER RECOVERY SERVICES

The provider shall have a disaster recovery plan in place prior to execution of this agreement. The provider's disaster recovery plan will be subject to review and periodic audit by the Federal government.

In the event of an unplanned interruption or inaccessibility to provider services relevant to this agreement, the government shall have access to and use of "backup capabilities," as defined below, after delivery of a "disaster notification" to the provider or its designee by the government or by the provider to the government. The initial disaster notification may be oral, electronic, or written. However, oral notifications must be followed by an electronic or written disaster notification within 24 hours.

Backup capabilities are defined as the computer and telecommunications equipment located at the provider-designated computer recovery center. This center operates in lieu of the providers regular services when those services are curtailed. Backup capabilities will be tested as part of the certification testing.

The government shall continue to have the right of access to and use of the backup capabilities until the provider's regular services are restored. The backup facilities must pass the same tests as used during initiation of services.

ACCESS TO ONE-TO-ALL (PUBLIC) TRANSACTIONS

The government will send all transaction sets intended for any interested party to see to all participating providers. These transactions will be sent as “one-to-all” (public) transactions and will be addressed to a mailbox specified by the provider. It will be the responsibility of the provider to disseminate this information to all interested subscribers to its services in the manner agreed to between the provider and the trading partner. All transactions must be accessible to interested subscribers within 2 hours of the time the transaction was sent to the provider or the time limits specified for a particular transaction set. The Federal government will provide all public transactions to each provider using the transaction exchange and interface methods selected by the provider for exchanging all transaction sets as part of this agreement.

VENDOR REGISTRATION

The provider, as a service required by the Federal government, will be responsible for providing, in electronic format, trading partner agreement guidelines and master solicitation requirements, including representations and certifications, to all subscribers interested in doing business with the Federal government. The Federal government will make this information available in electronic text format to the provider. In addition, the provider will assist the Federal trading partner in completing an electronic vendor registration form using transaction set 838 and the Federal implementation conventions for vendor registration. The provider is required to provide access to this transaction set to all interested parties. Upon completion of transaction set 838, the provider will transmit the information to the Federal EC system.